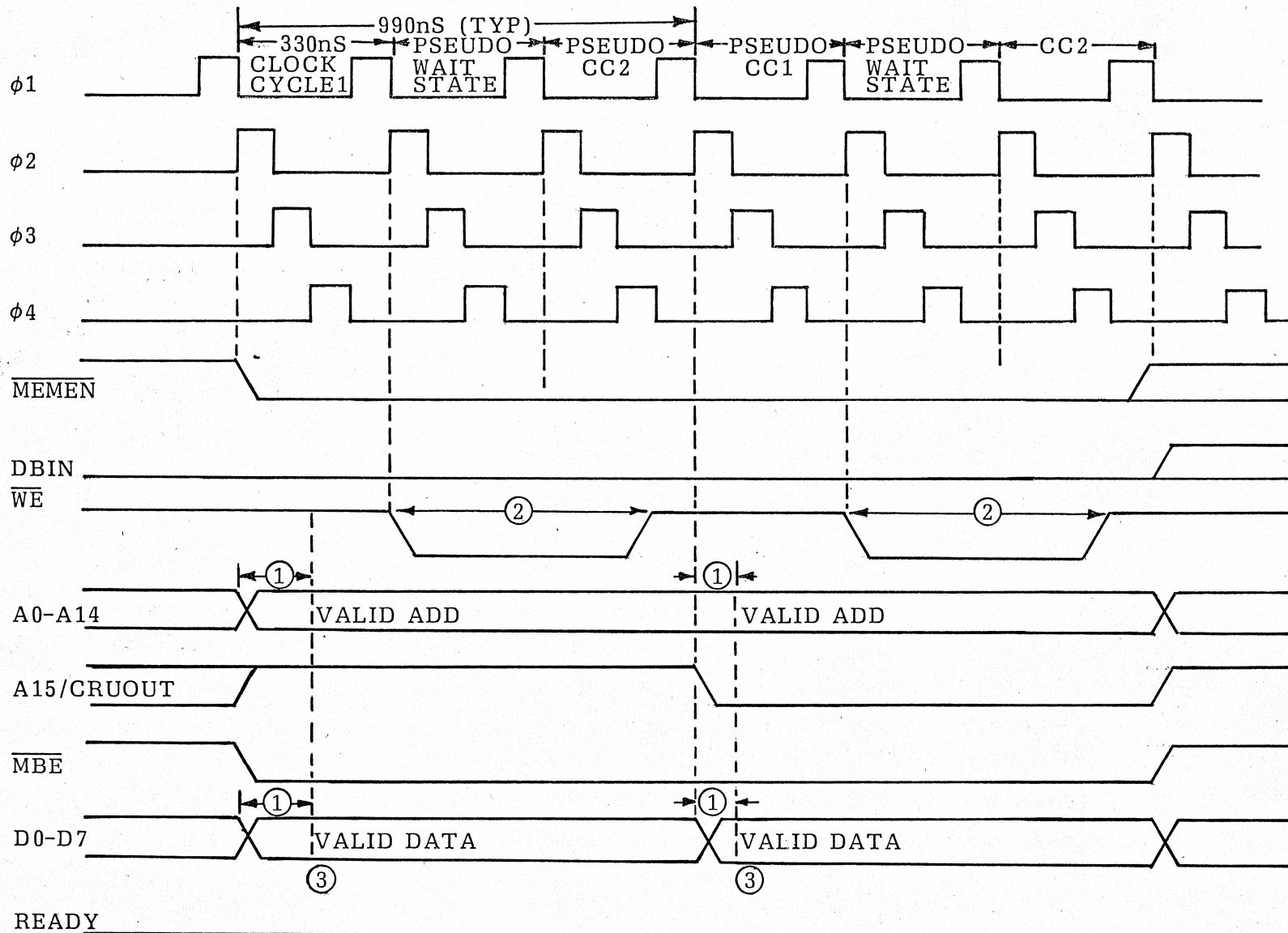
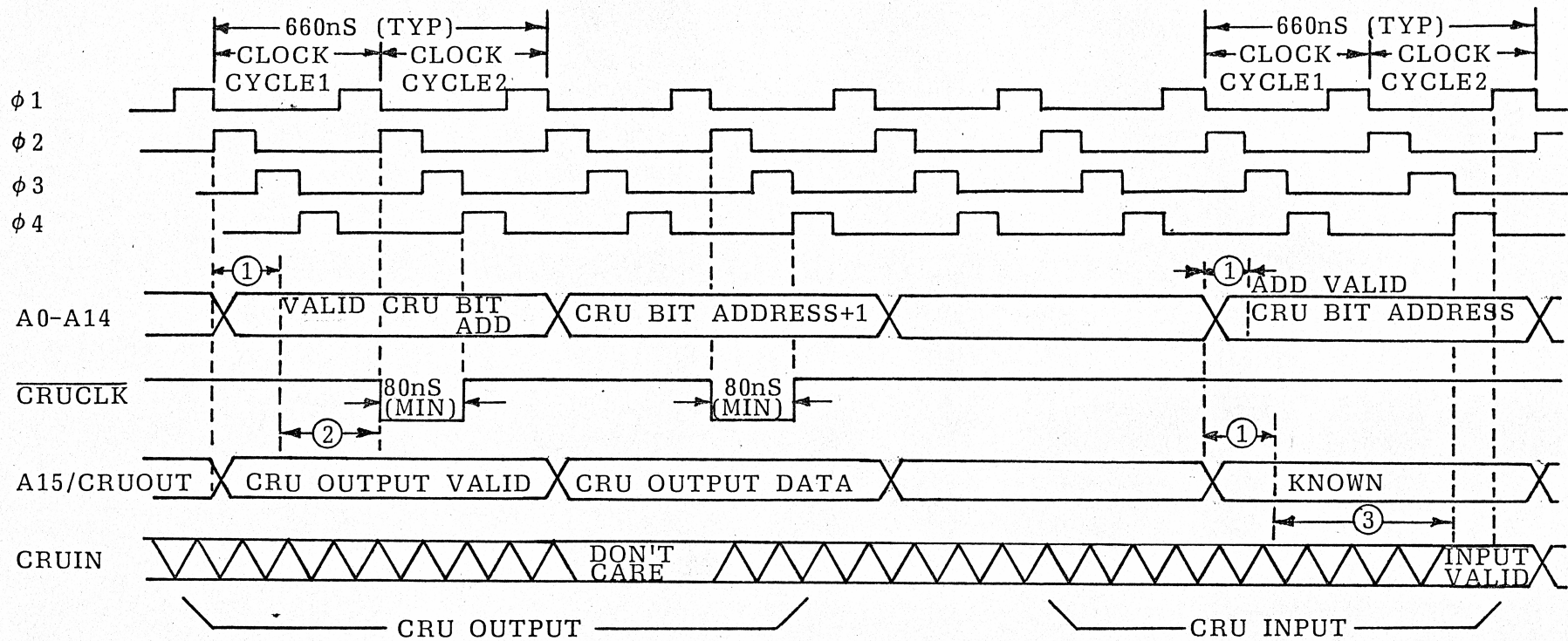


FIGURE B
I/O READ TIMING



- ①-SETTLING TIME= 100ns (MIN)
- ②-WE PULSE WIDTH= 660ns (TYP)
- ③-VALID DATA

FIRURE C
I/O WRITE TIMING



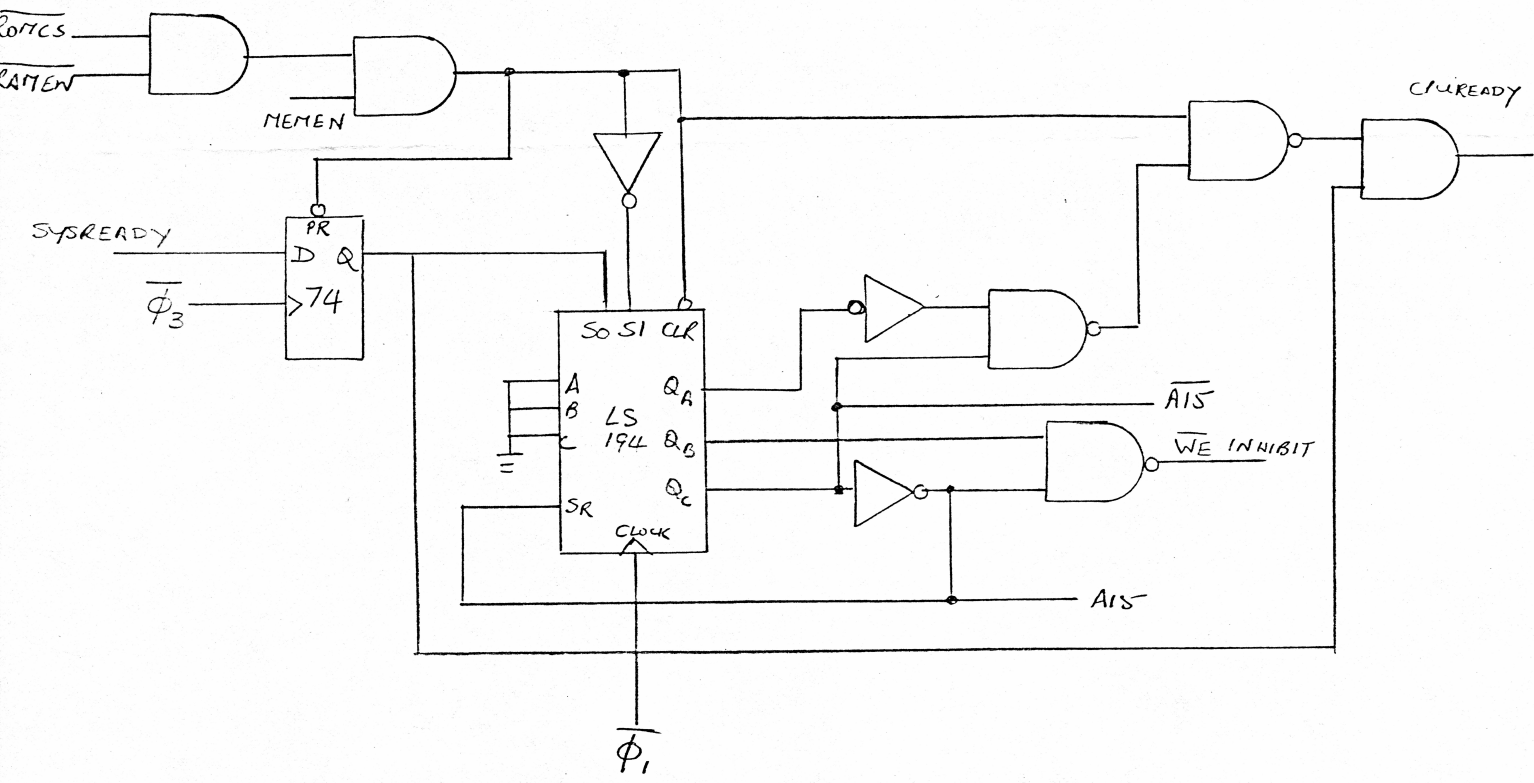
- ① -SETTLING TIME 100ns (MIN)
- ② -ADD VALID TO $\overline{\text{CRUCLK}}$ =220ns (TYP)
- ③ -ADD VALID TO VALID CRUIN =400ns (MAX)

FIGURE D
CRU TIMING

1/31/79

To: Granville Ott
Herb Taylor
Jack Anderson
Allan Lawson
C.B. Wilson

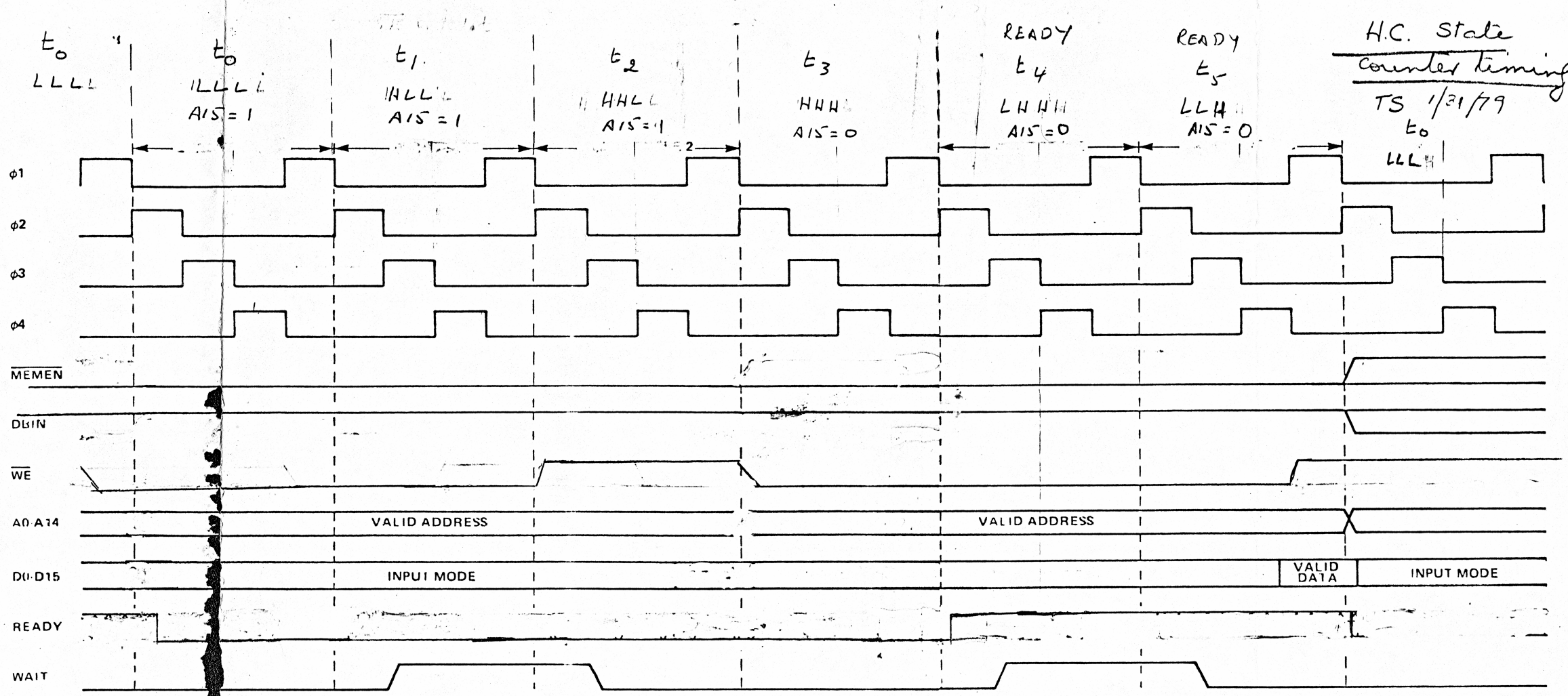
From: Tamim Shipchandler



Now that the trial and tribulations of implementing and checking out the above state logic is complete, let us plan on installing it in all simulators and systems. The state logic is currently working in simulator 4. A timing diagram is attached for your use.

Thanks.

TS.



H.C. State
 Counter timing
 TS 1/31/79
 t₀
 LLLH

To: Granville OH
Herb Taylor
Jack Anderson
Alan Lawson
C. B. Wilson

2/1/79

From: Tamara Shiphandle

Subject: my memo and timing diagram of 1/31/79

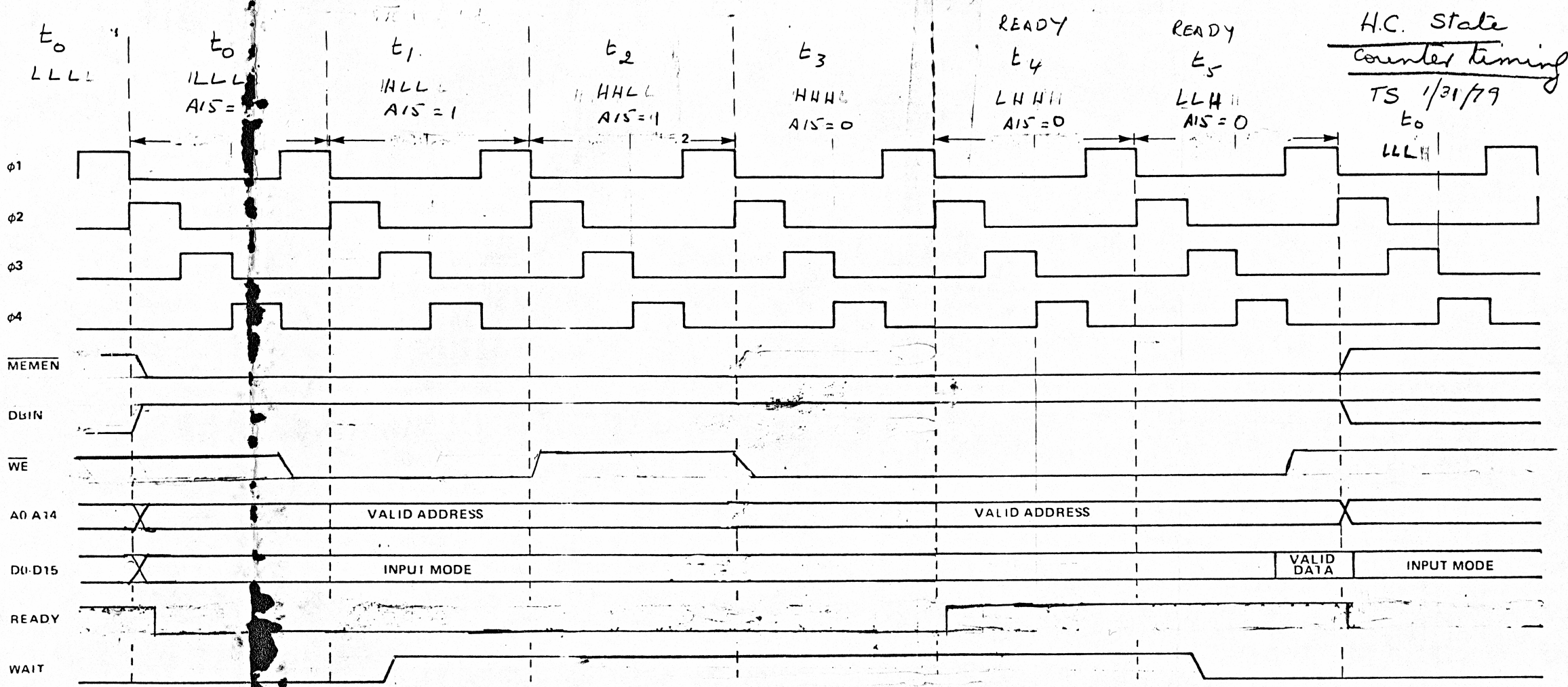
Due to an oversight on my part, minor errors crept into

the timing diagram in the \overline{MEMEN} , \overline{WE} , \overline{DBIN} and \overline{WAIT} signals.

Please correct as attached.

Thanks

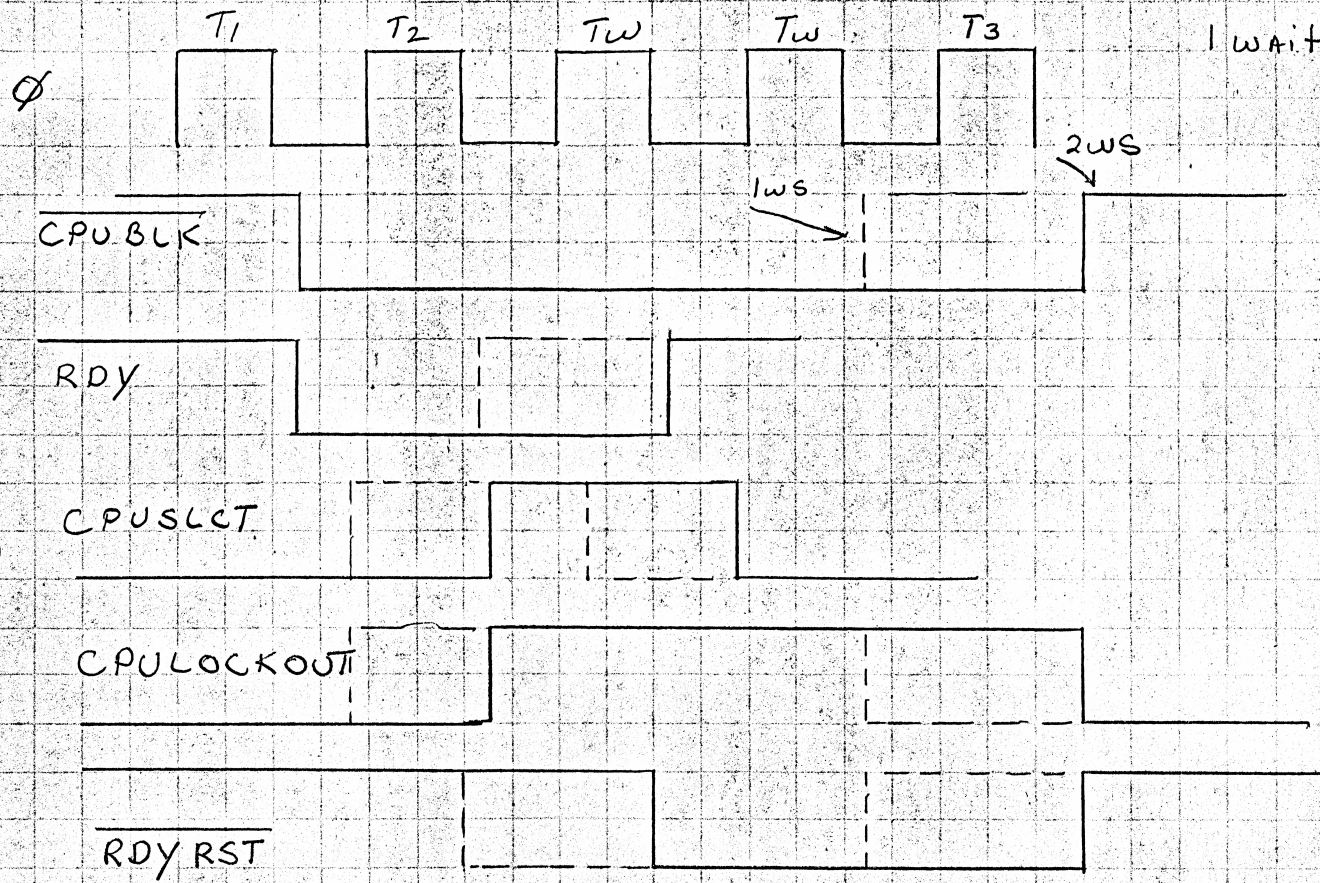
LS.



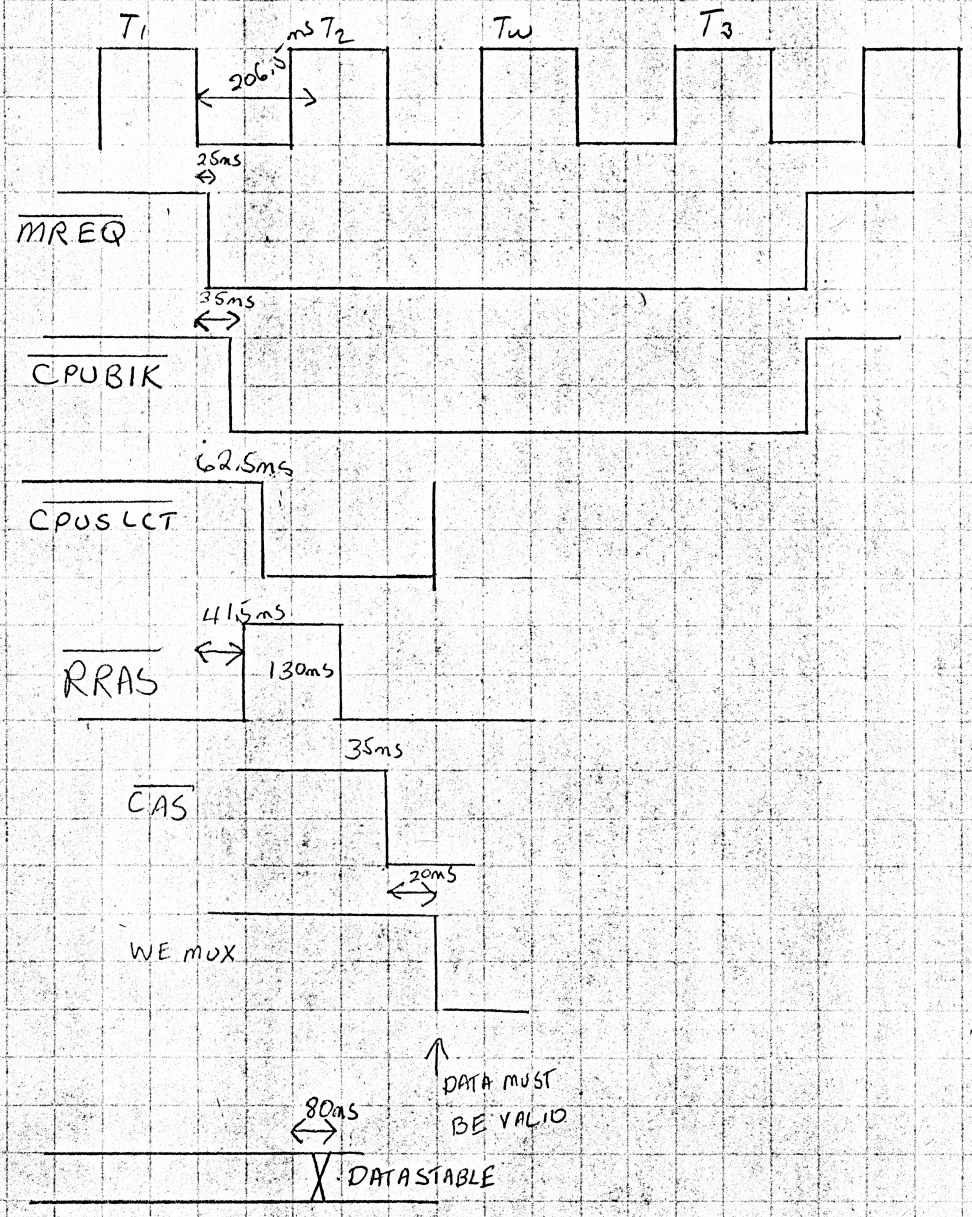
Revision 1.

READY TIMING

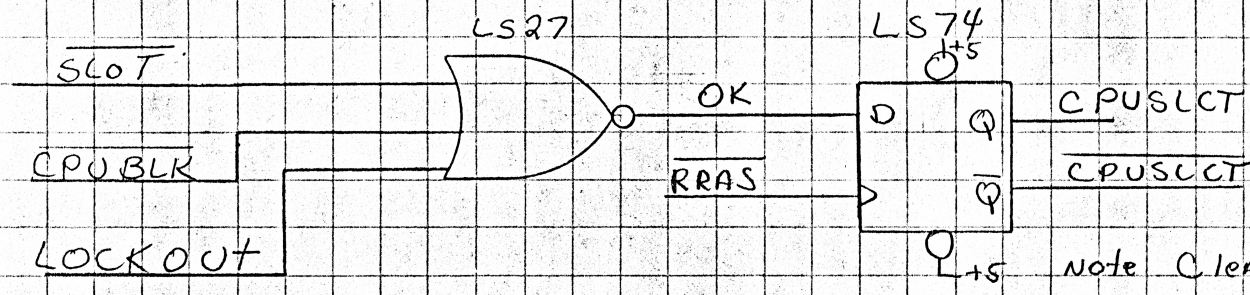
1 wait state Automatic



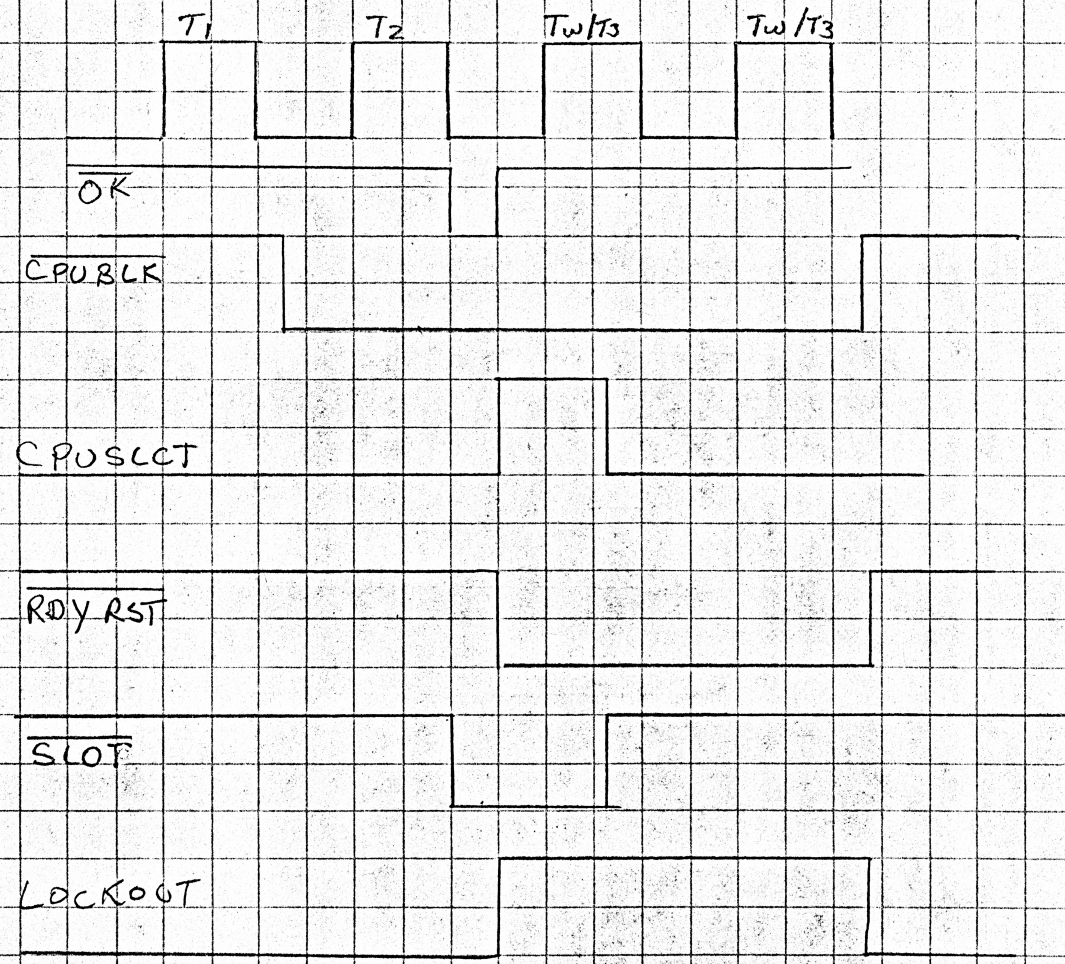
WRITE TO RAM Timing DATA SETUP WORST CASE



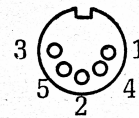
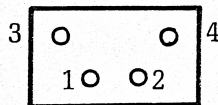
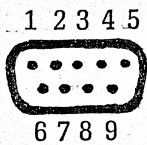
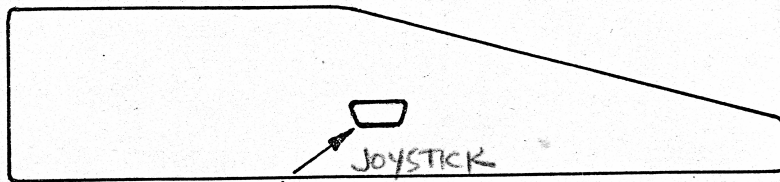
CPUSLCT GEN CIRCUIT



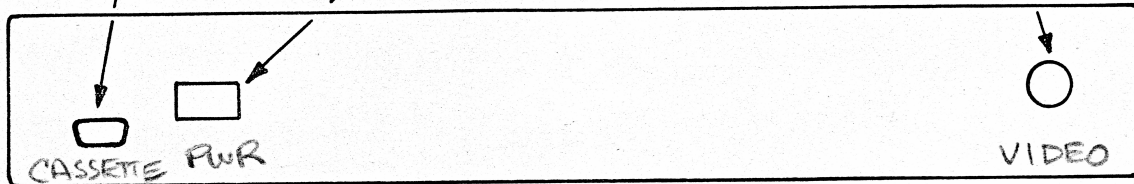
Note Cleared at Reset
by first \overline{RRAS}



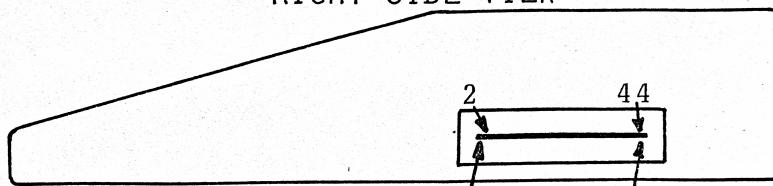
LEFT SIDE VIEW



BACK VIEW

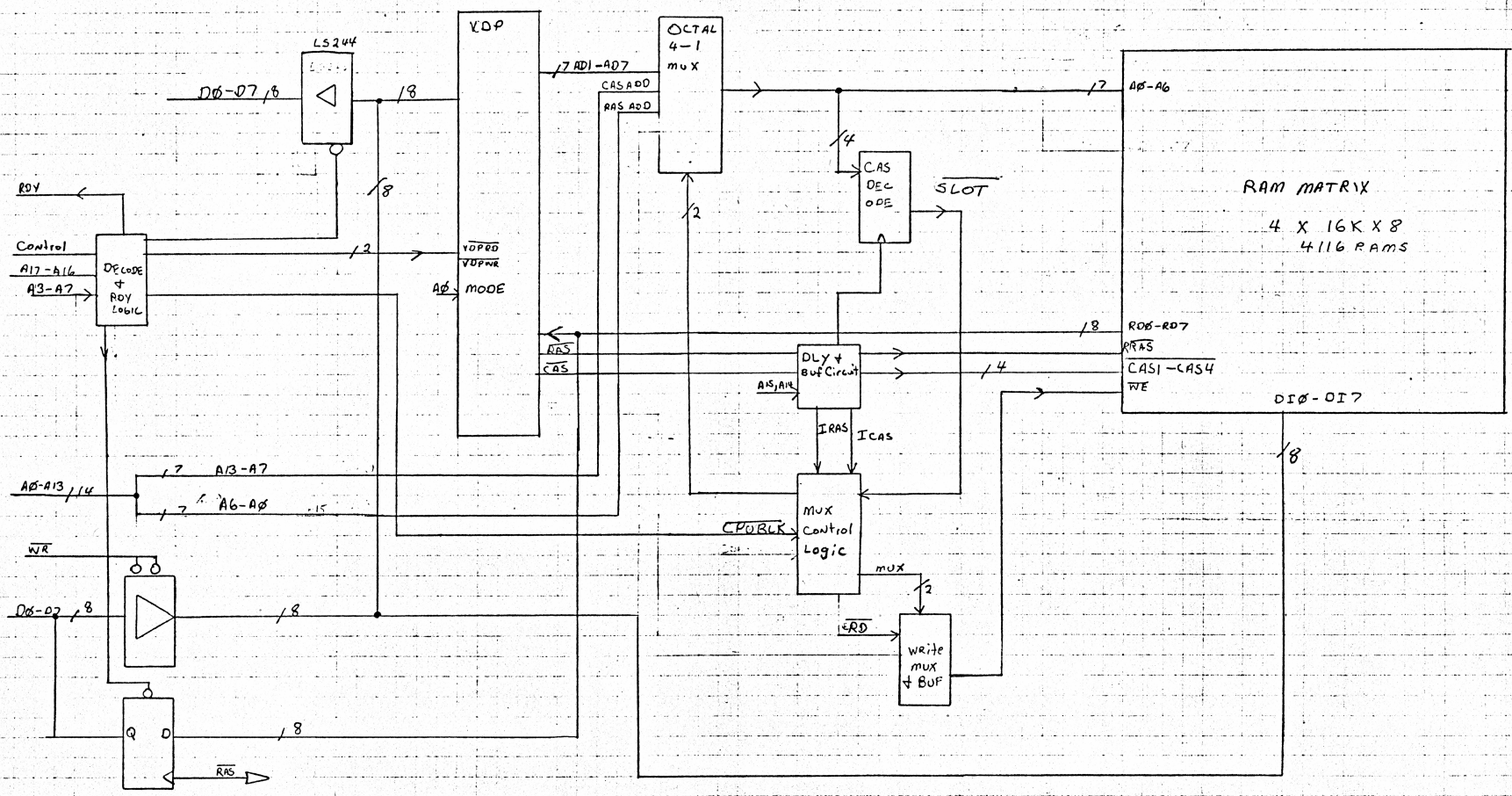


RIGHT SIDE VIEW



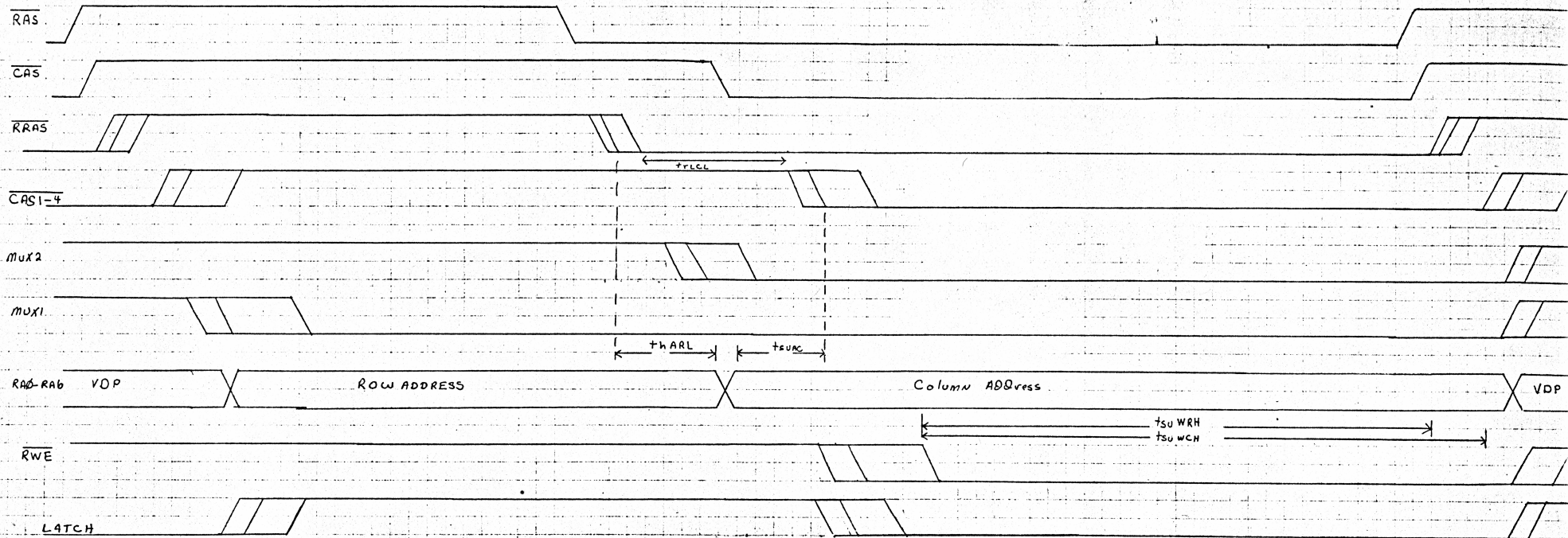
~~I/O~~
I/O PORT

Color Video RAM Controller



Sept 18, 80

Color Video Ram Controller

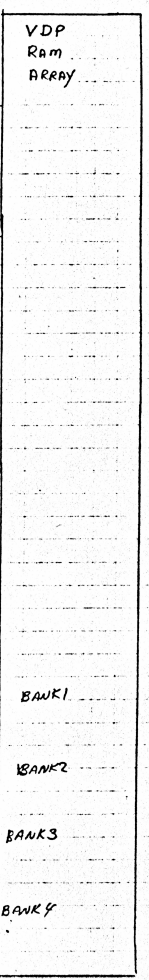
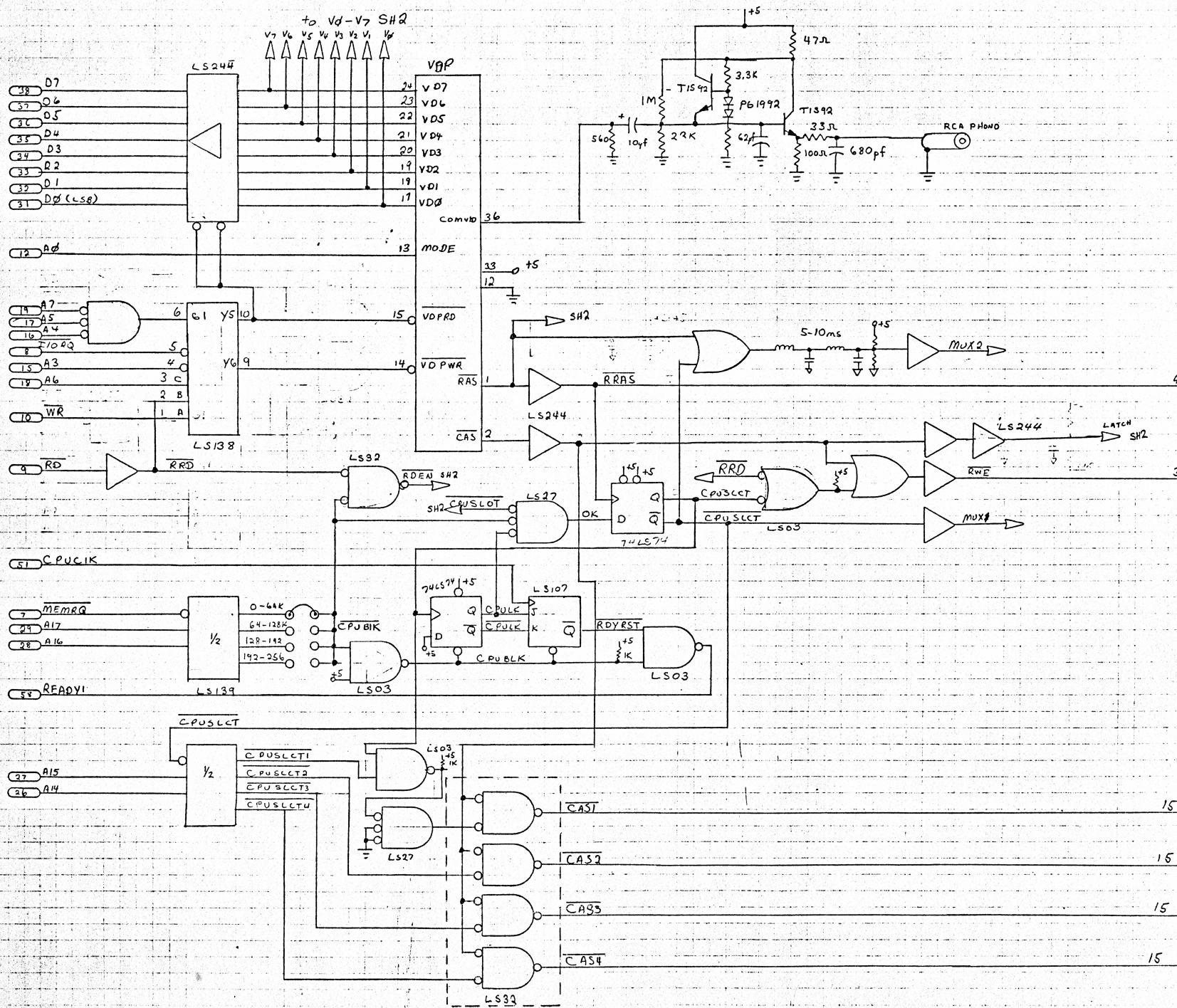


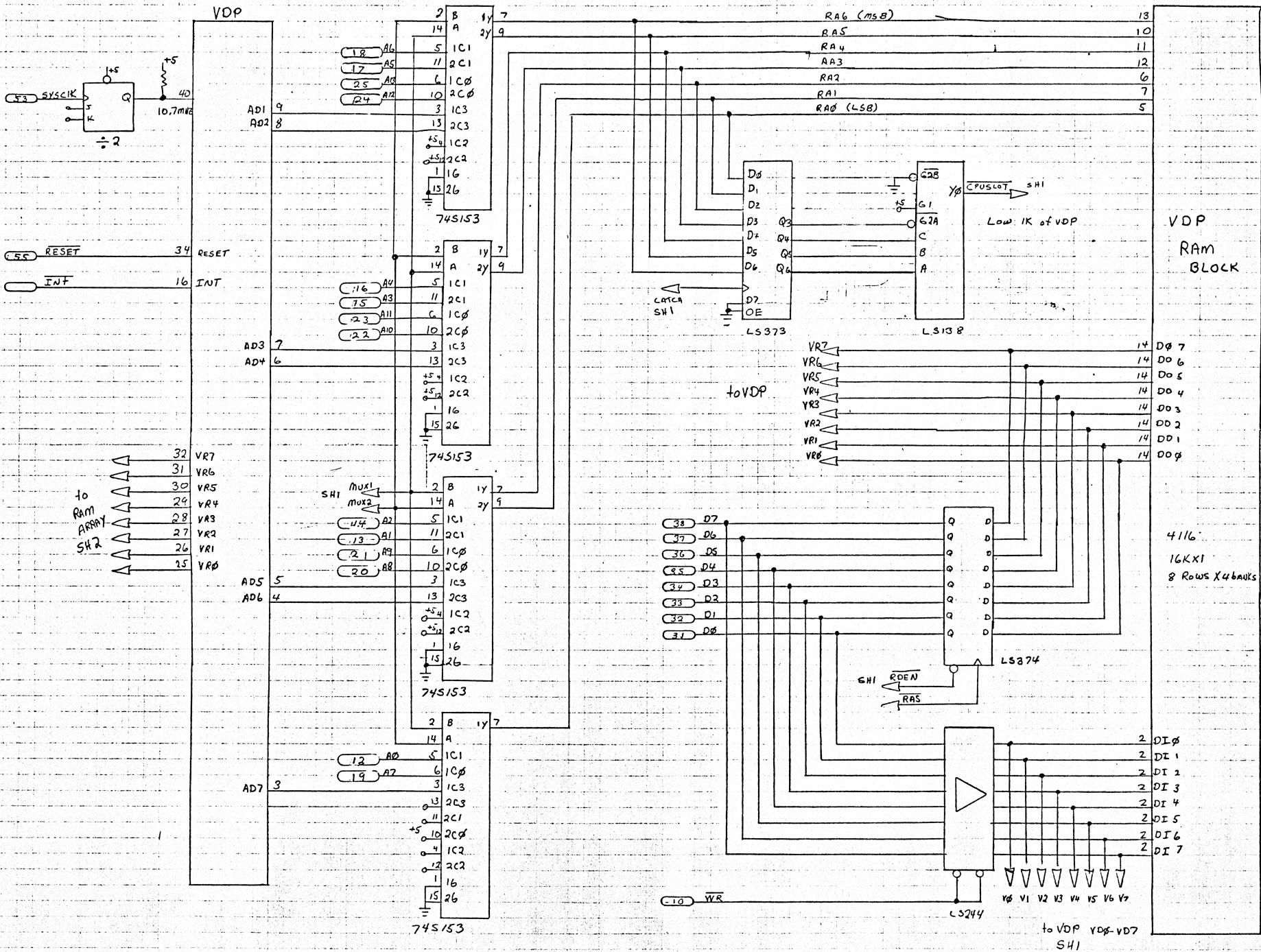
	Typical VDP timing			Worst Case RAS/CAS		
	MIN	Typ	MAX	MIN	Typ	MAX
TRCL	42ms	55	73	35	48	66
THARL	21ms	37	58	21ms	37	58
TSUAC	-6ms	18	43	-13ms	11	36
TSUWRH	135	150	159	120	135	124
TSUWCH	150	165	174	135	150	159

VDP - VOPRAM

	MIN	Typ	MAX
THARL	16ms	25	34ms

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ALPHA LOCK	1	2	3	4	5	6	7	8	9	0	-	+	~
TAB	q	w	e	r	t	y	u	i	o	p	[]	
CNTL	a	s	d	f	g	h	j	k	l	;	'	ENTER	
SHIFT	z	x	c	v	b	n	m	<	>	?	/	SHIFT	
SECOND FUNCTION													

DEL CHAR	Pg FWD	INS CHAR	EDIT LOCK
7 ↘	8 ↑	9 ↗	Pg BKWD
4 ←	HOME	6 →	DEL LINE
1 ↙	2 ↓	3 ↘	ENTER
INS LINE O		PRINT SCRN	